

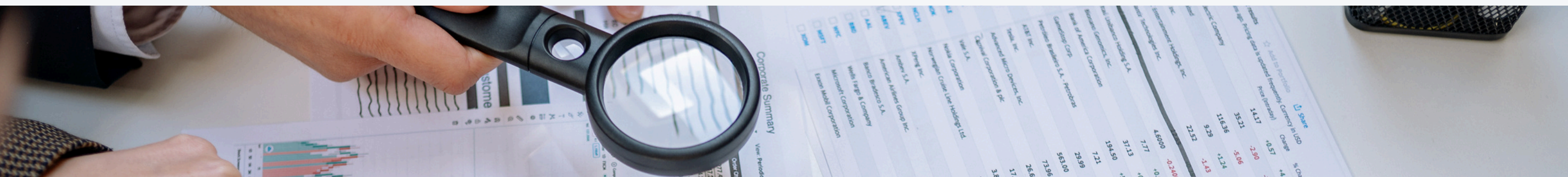
SUPERSTORE SALES & PROFITABILITY ANALYSIS

Exploratory Data Analysis & Business Insights Report

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Tools: Python (EDA), Power BI (Dashboard)

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Executive Summary

01 Furniture category generates high sales but operates at very low profit margin (2.49%).

02 Several high-sales states (Texas, Ohio, Pennsylvania, Illinois) consistently operate at losses.

03 Discount shows strong negative correlation with profit margin (-0.865).

04 Central and Southern regions underperform relative to their sales volume.

\$2.3M

Total Sales

\$286.39K

Total Profit

12.47%

Profit Margin

Lowest Profit Margin Sub-Categories:

- Tables (-9%)
- Bookcases (-3%)
- Supplies (-3%)
- Machines (2%)

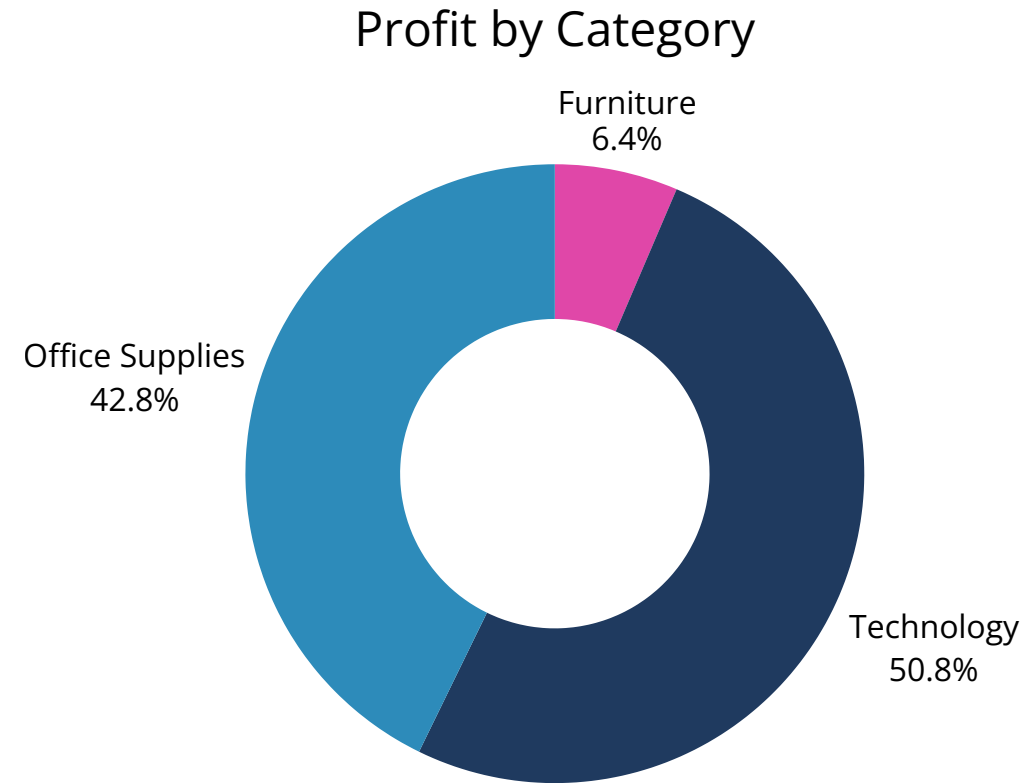
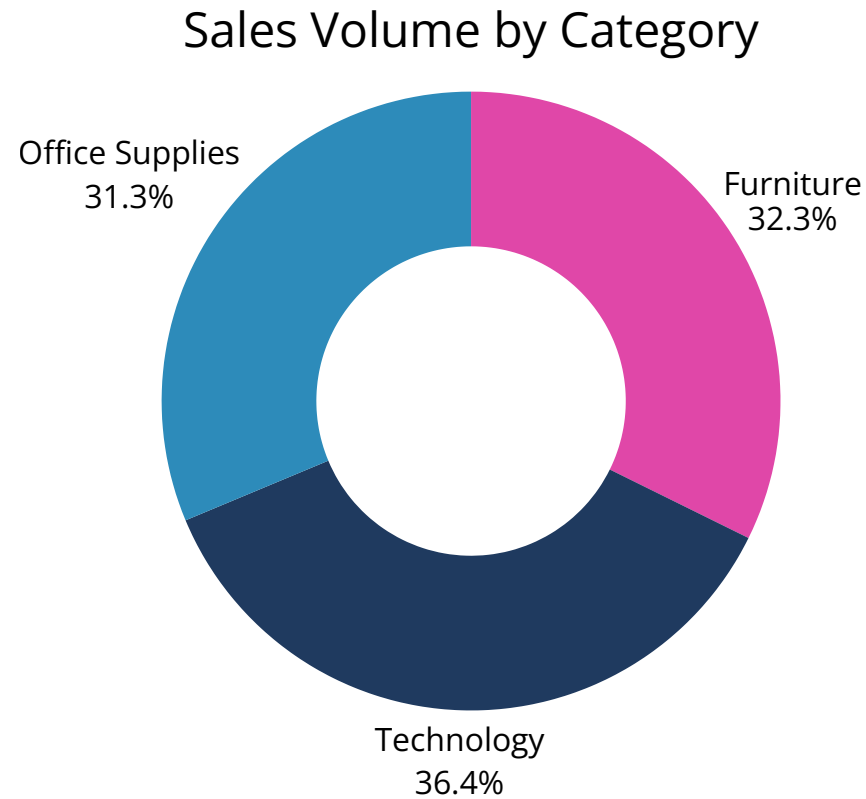
Worst Performing States:

- Texas (\$25k)
- Ohio (\$17k)
- Pennsylvania (\$16k)
- Illinois (\$13k)

Business Questions

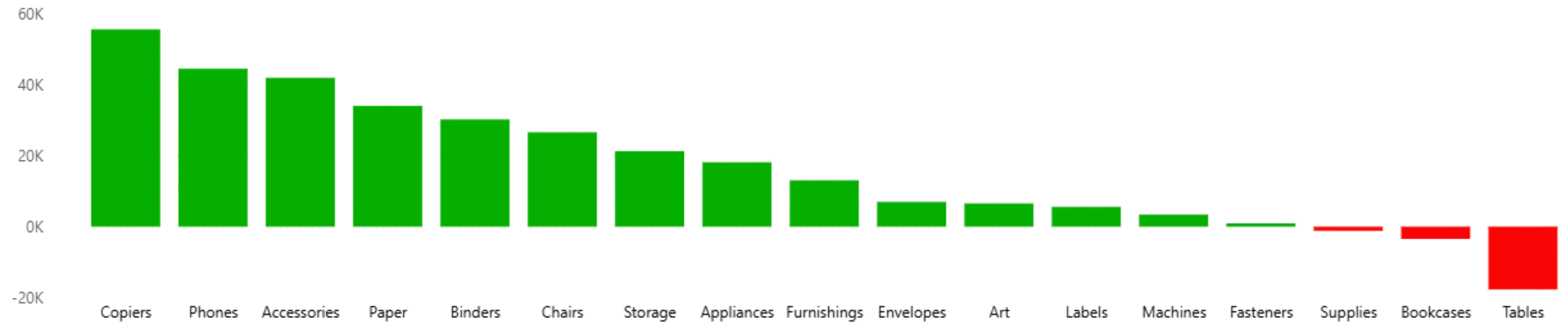
- 01 Which categories and subcategories drive profit and losses?
- 02 Which states and regions perform best and worst?
- 03 How do discounts affect profitability?
- 04 Do shipping mode and customer segments influence profit?
- 05 Where should management intervene to improve performance?

Category-Level Performance



"Furniture records strong sales volume but remains the weakest category in profitability contributing to only 6.4% of the total profit, indicating structural pricing or cost issues."

Subcategory Profit & Loss Drivers

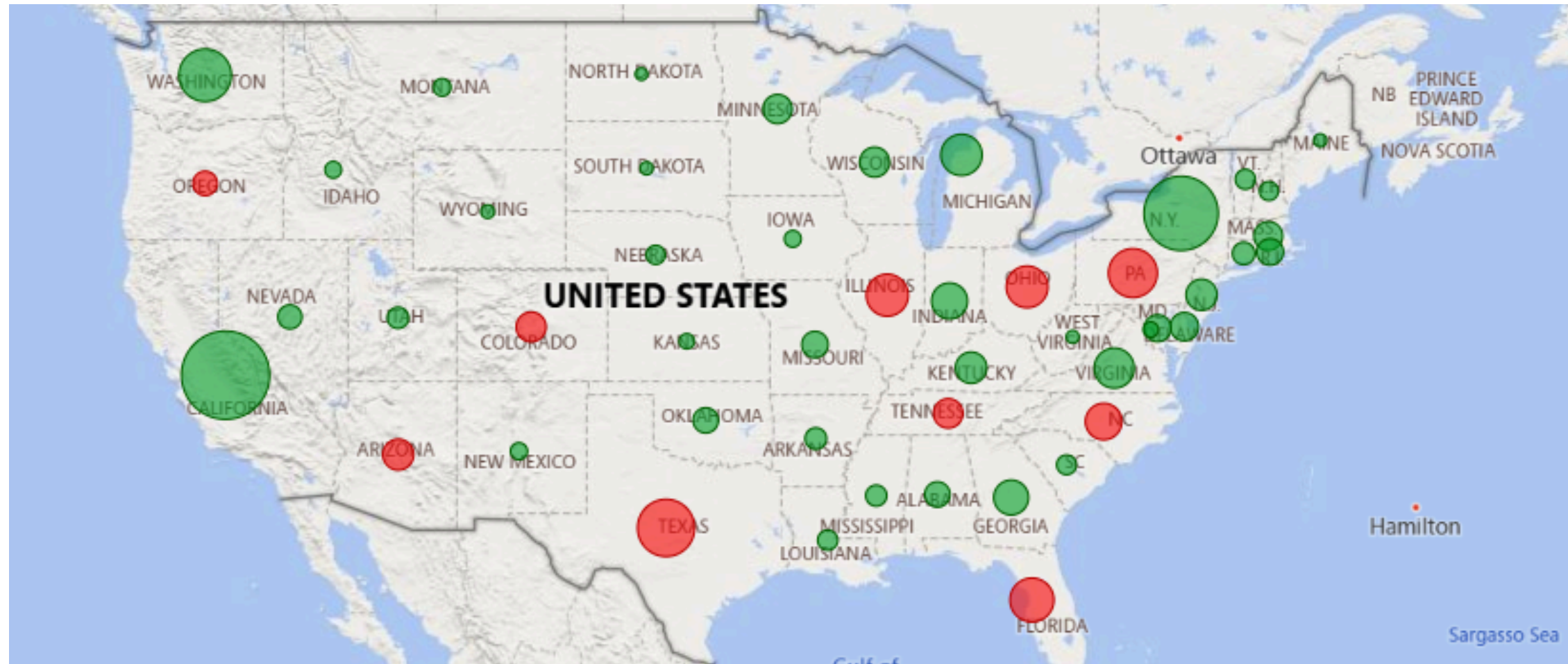


Insight:

- Tables and Bookcases are the major loss drivers.
- Copiers, Phones, Accessories, Paper, and Binders generate most profits.

State-Level Performance

Bubble size indicate **Sales** and **Color** indicate **Profit** or **Lost**

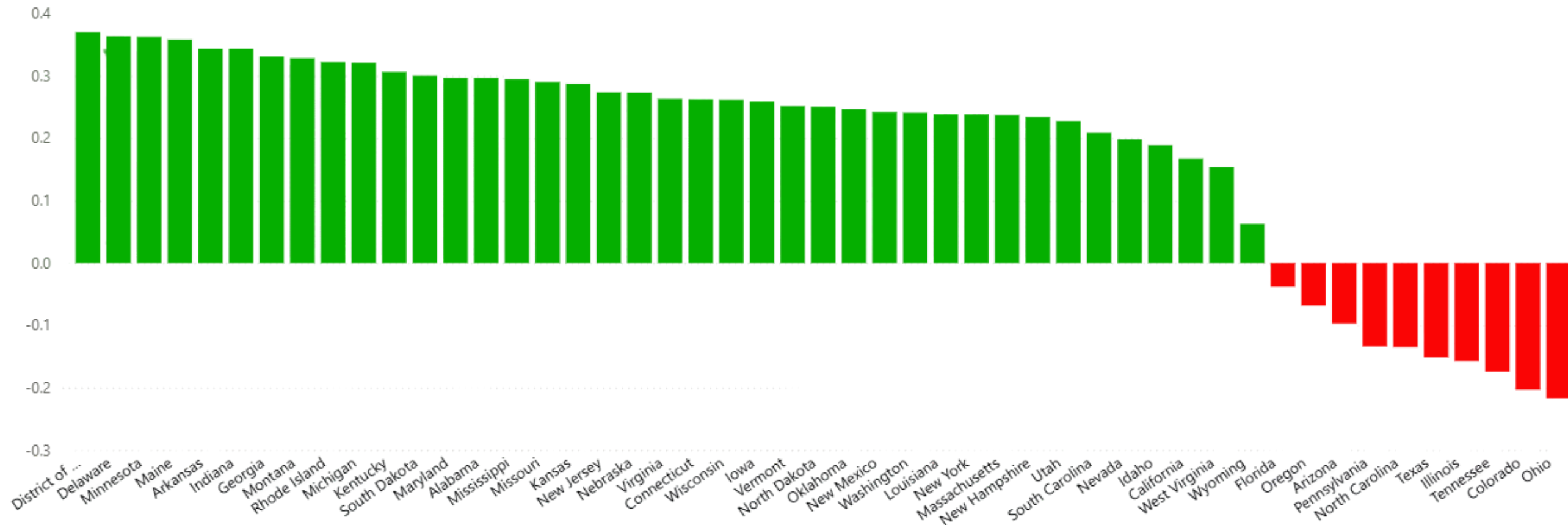


"High sales do not guarantee profitability. Texas, Ohio, Pennsylvania, and Illinois rank among top sales states but remain the largest loss contributors."

Highlight:

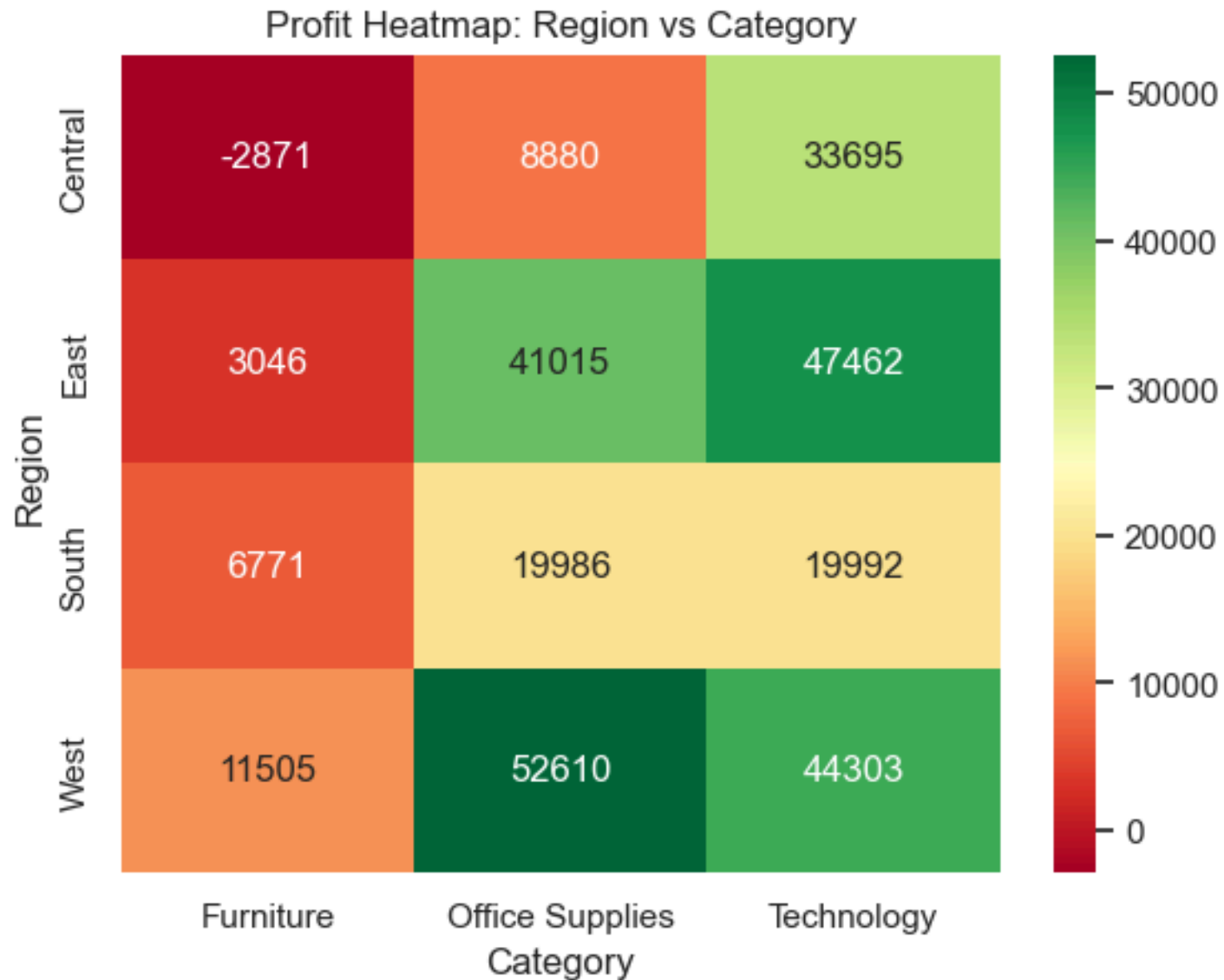
- Top Gainers: California, New York
- Top Losers: Texas, Ohio, Pennsylvania, Illinois

Profit Margin Analysis



Ten(10) states operate with **negative profit margins** despite high transaction volumes, indicating inefficient cost and discount structures. States include: **Ohio, Colorado, Tennessee, Illinois, Texas, North Carolina, Pennsylvania, Arizona, Oregon, Florida.**

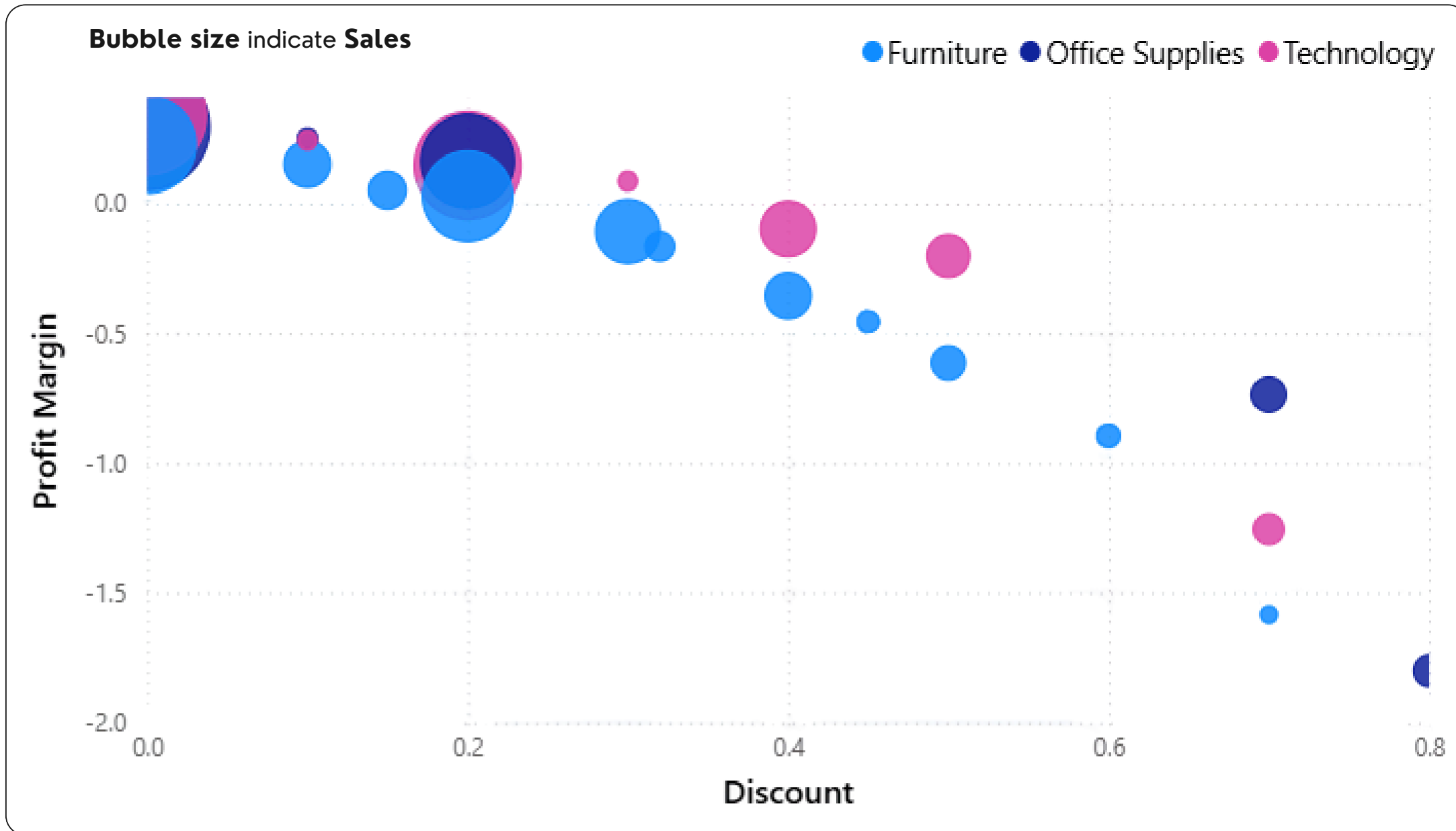
Region & Category Interaction



Insight:

- Furniture performs **poorly** across **all regions**.
- **Central region** is the **worst-performing** for furniture.
- Office supplies perform **best** in the **West**.

Impact of Discount on Profit Margin



A strong negative correlation (-0.865) exists between discount and profit margin, confirming that **aggressive discounting** significantly **erodes** **profitability**.

Operational Factors

Insights:

- Customer segment alone **does not** drive profitability.
- Shipping mode **has no** overall **impact** on profit.
- Machine **losses** are concentrated in **First Class** shipping.
- Supplies **losses** are high for **standard** shipping.
- Tables remain **unprofitable** across **all shipping modes**.

Sub-Category	First Class	Same Day	Second Class	Standard Class
Accessories	26.58%	28.07%	23.24%	24.98%
Appliances	22.54%	17.41%	18.49%	14.57%
Art	21.62%	28.07%	24.65%	24.05%
Binders	11.42%	19.59%	20.14%	14.51%
Bookcases	-1.45%	13.22%	-4.61%	-3.69%
Chairs	5.54%	5.24%	9.04%	8.71%
Copiers	37.59%	34.14%	36.42%	37.46%
Envelopes	39.07%	44.13%	44.96%	42.17%
Fasteners	35.54%	33.00%	33.06%	30.18%
Furnishings	15.91%	8.18%	11.73%	15.03%
Labels	43.83%	43.35%	43.75%	45.00%
Machines	-6.64%	1.92%	9.59%	2.00%
Paper	43.23%	44.38%	43.91%	43.13%
Phones	15.67%	11.16%	13.24%	13.16%
Storage	11.46%	11.08%	11.21%	8.45%
Supplies	3.17%	15.47%	-1.72%	-6.62%
Tables	-4.74%	-11.71%	-7.60%	-9.54%

Key Insights

- 01 High sales \neq high profit, especially in Furniture and Central/Southern regions.
- 02 Discount strategy is the strongest driver of profit erosion.
- 03 Losses are concentrated in specific product-region combinations.
- 04 California and New York dominate profitability while Texas, Pennsylvania, Illinois and Ohio drive losses.
- 05 Tables and Bookcases are the major loss drivers.

Business Recommendations

1.	Reprice Furniture Category	Review Tables & Bookcases pricing and cost structure.
2.	Control Discount Strategy	Set discount caps especially for Furnishings and Central region .
3.	Target Loss States	Audit Texas , Ohio , Pennsylvania , Illinois operations.
4.	Optimize Shipping Policies	Review First Class shipping for Machines and Standard Class shipping for Supplies .
5.	Double Down on Profitable Products	Expand Copiers , Phones , Accessories , paper , binders in strong states.

THANK YOU

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